



GROUP	MODEL
ELE	2021-2022MY Sorento HEV, PHEV (MQ4 P/HEV)
NUMBER	DATE
271 (Rev 1, 04/28/2023)	April 2023

TECHNICAL SERVICE BULLETIN

SERVICE ACTION: INVERTER COOLANT/DEBRIS FLUSHING/REPLACEMENT FOR CLUSTER MESSAGE "REFILL INVERTER COOLANT" (SA515)

NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides information to flush out the inverter low-conductivity coolant (BSC-1) on certain 2021-2022MY Sorento HEV (MQ4 HEV) vehicles produced from September 2, 2020 through September 29, 2021 and Sorento PHEV (MQ4 PHEV) vehicles produced from June 29, 2021 through October 1, 2021, which may exhibit a "Refill inverter coolant" message displayed on the instrument cluster due to poor flow of coolant/antifreeze inside the low-conductivity coolant pipe. In most cases, the inverter reservoir tank coolant may be filled to normal level and no diagnostic trouble codes (DTC)s are stored due to an increase operation of the electric water pump (EWP) that is 2,800 RPMs or more when checked. Follow the procedure outlined in this publication to flush out the low-conductivity coolant/debris inside the coolant pipe and replace the inverter coolant with the new improved formula, the reservoir tank cap label and to distribute the leaflet. Before conducting the procedure, verify that the vehicle is included in the list of affected VINs.

NOTICE

A Service Action is a repair program without customer notification that is performed during the warranty period. Any dealer requesting to perform this repair outside the warranty period will require DPSM approval.

Repair status for a VIN is provided on WebDCS (Service → Warranty Coverage → Warranty Coverage Inquiry → Campaign Information). Not completed Recall / Service Action reports are available on WebDCS (Consumer Affairs → Not Completed Recall → Recall VIN → Select Report), which includes a list of affected vehicles.

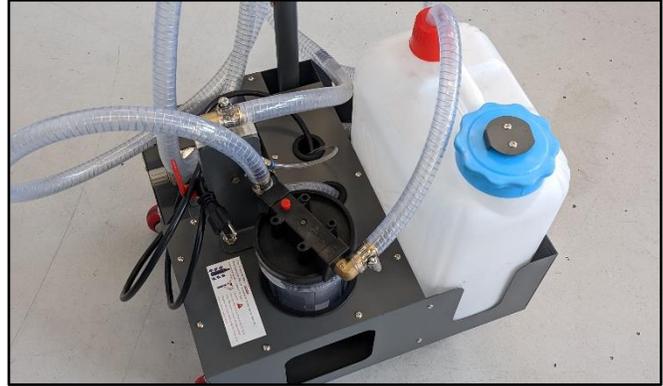
This issue number is SA515.

SUBJECT:

INVERTER COOLANT/DEBRIS FLUSHING/REPLACEMENT FOR CLUSTER MESSAGE "REFILL INVERTER COOLANT" (SA515)

Repair Procedure: (HEV & PHEV)

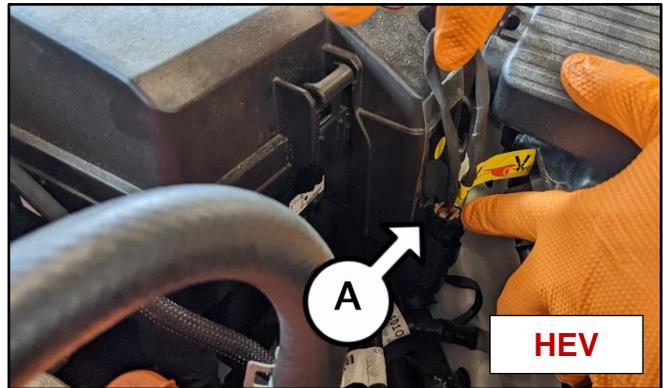
1a. Refer to TSB [SST080](#) 'Coolant Flushing Machine Guide' for initial setup/cleaning instructions before beginning work.



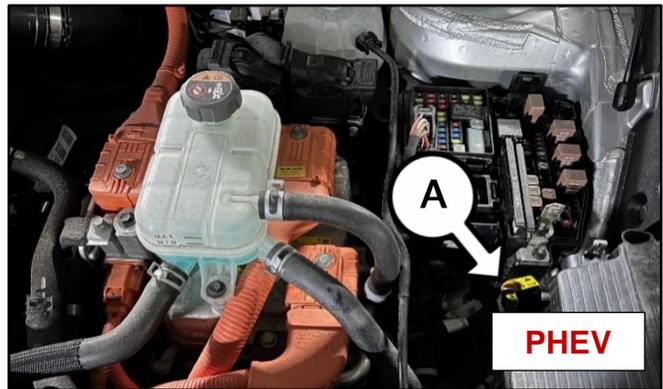
1b. Fill the SST reservoir tank with water (1/2 full).

Note: 'New' coolant should never be added into the SST reservoir tank.

2. Open the hood and remove the service interlock connector (A).



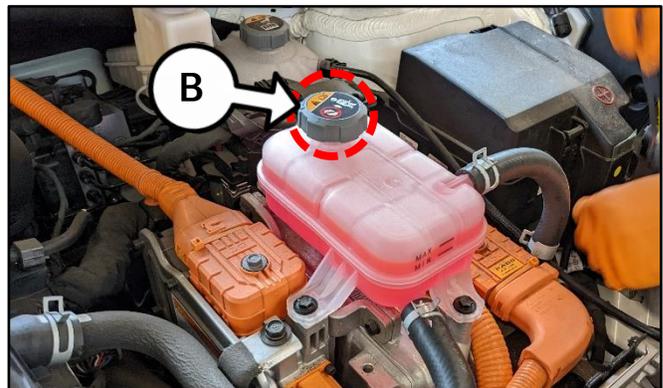
- HEV



- PHEV

3. Remove the coolant reservoir cap (B).

Note: Disregard pink color coolant in the images shown (for reference use only).



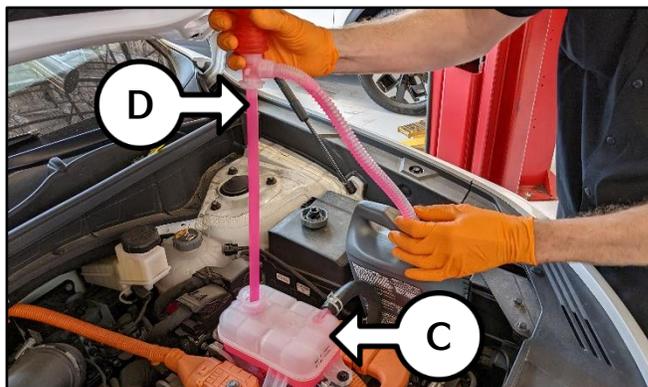
(HEV model shown above for reference purpose only)



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4. Drain the coolant from the reservoir (C) into an empty container using the SST kit 'syphon pump' (D).

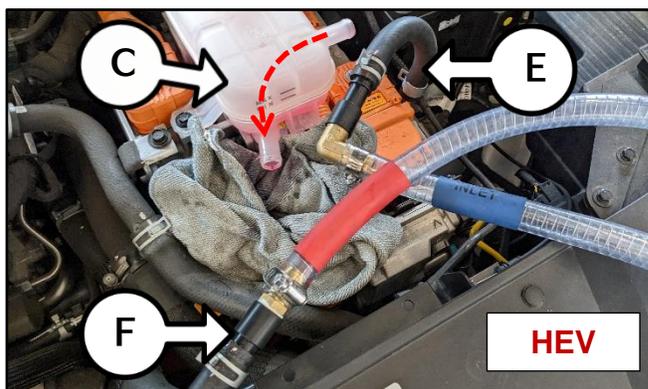


(HEV model shown above for reference purpose only)

5. **HEV:** Remove both the inlet (E) and outlet (F) circulation hoses (HEV model shown) from the coolant reservoir (C).

Connect the Inlet (E) and Outlet (F) hoses from the flushing machine to the detached circulation hoses (E and F) as shown.

Remove the coolant reservoir (C).

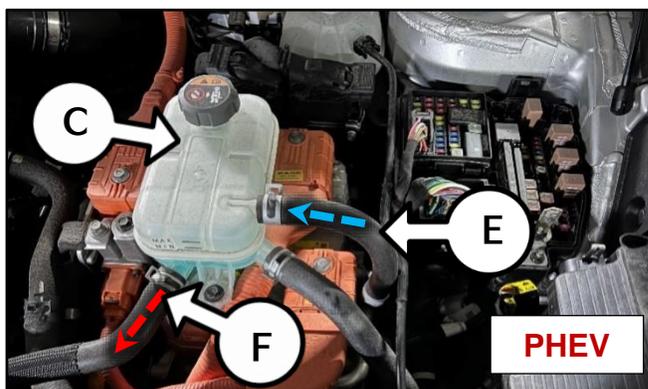


(HEV model shown above for reference purpose only)

PHEV: Remove both the inlet (E) & outlet (F) circulation hoses (HEV model shown) from the coolant reservoir (C).

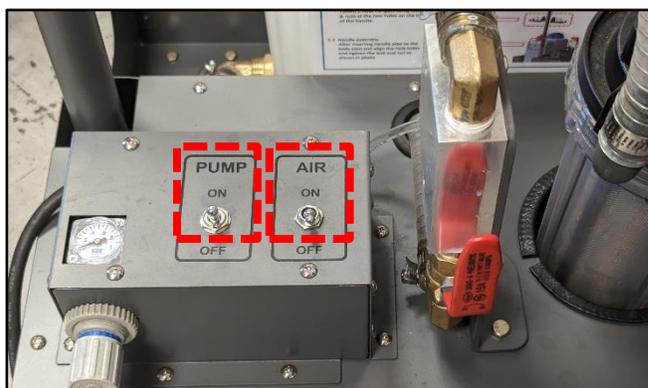
Connect the Inlet (E) and Outlet (F) hoses from the flushing machine to the detached circulation hoses (E and F) as shown.

Remove the coolant reservoir (C).



6. Turn the 'Air' and 'Pump' toggle switches of the flushing machine to the 'ON' position to begin the 1st flush of the coolant pipe. Follow the outlined instructions to **complete three (3) coolant flushes** for both HEV & PHEV.

NOTE: An additional separate flush of the air separator is required for PHEV ONLY.



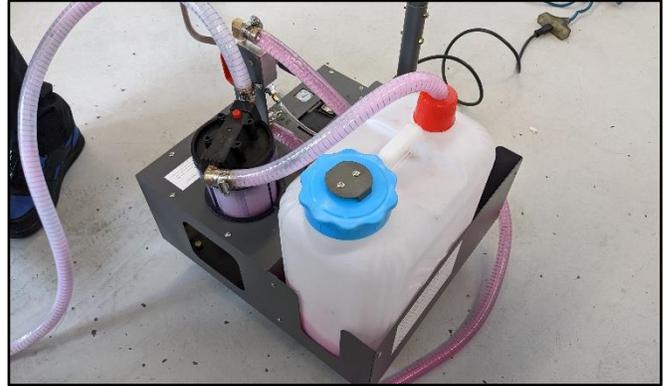
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- Allow machine to run for three (3) minutes. (HEV and PHEV)

While machine is running:

- Separately, clean/flush any remaining coolant/debris from the removed coolant reservoir (C) using clean water. Dry the reservoir (C) using an air gun.

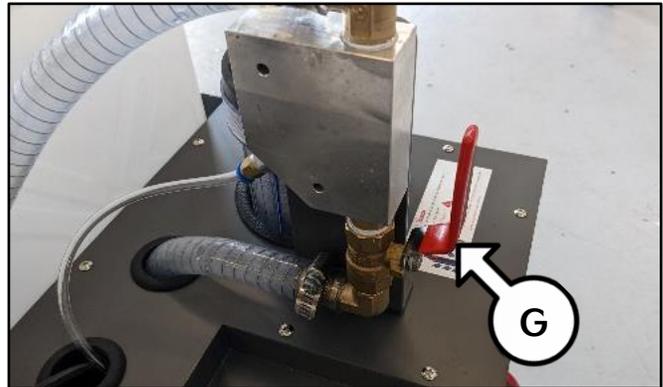


- After the three (3) minutes have passed, turn the flushing machine 'Pump' toggle switch to the 'OFF' position.

Note: Keep the 'Air' toggle switch in the 'ON' position to drain excess coolant remaining in line for at least thirty (30) seconds.



Note: The coolant 'Pump' should be turned 'OFF' and the 'Inlet Valve' (G) closed. When the 'Inlet Valve' is opened, air may flow back and the coolant drain.



- Detach the Inlet/Outlet hoses from the vehicle and then reverse (switch) the flushing machine Inlet/Outlet hoses to the vehicle as shown.

Note: Outlet to Inlet and Inlet to Outlet

- Reinstall the coolant reservoir (C) in the reverse order of removal.



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11. Turn the flushing machine 'Pump' toggle switch to the 'ON' position and allow the flushing machine to run for three (3) minutes to begin the **2nd flush** of the coolant pipe.

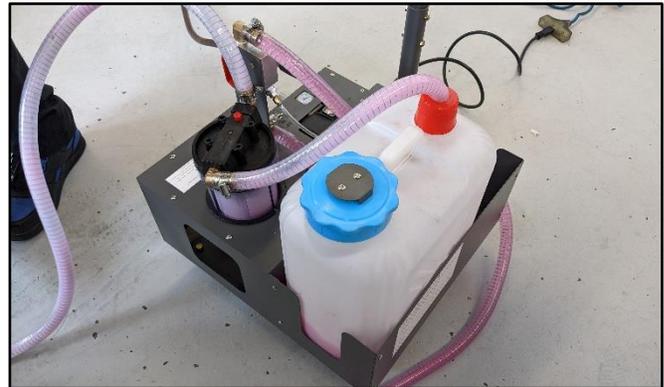
12. After the **2nd flush** is complete, repeat step 8 for a **3rd flush** to complete flushing of the coolant pipe.



13. After the three (3) minutes have passed, turn the flushing machine 'Pump' toggle switch to the 'OFF' position.

Note: Keep the 'Air' toggle switch in the 'ON' position to drain excess coolant remaining in line for at least thirty (30) seconds.

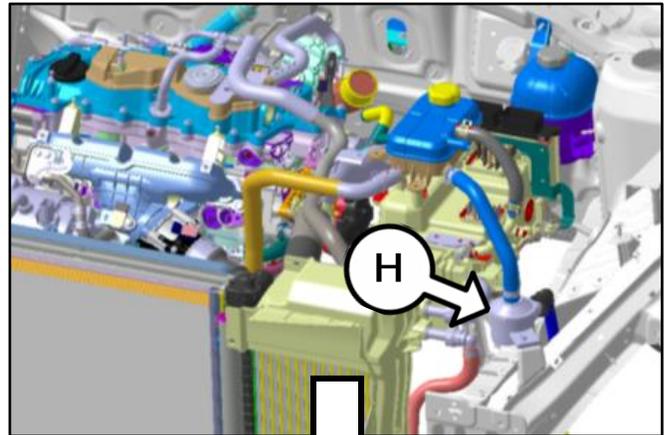
- **HEV ONLY** - Skip to step 18.



14. **PHEV ONLY:** Locate the two (2) inlet (E) & outlet (F) circulation 'quick-connect' hoses (PHEV ONLY) from the air separator (H) and disconnect them from the air separator.

TECH TIP

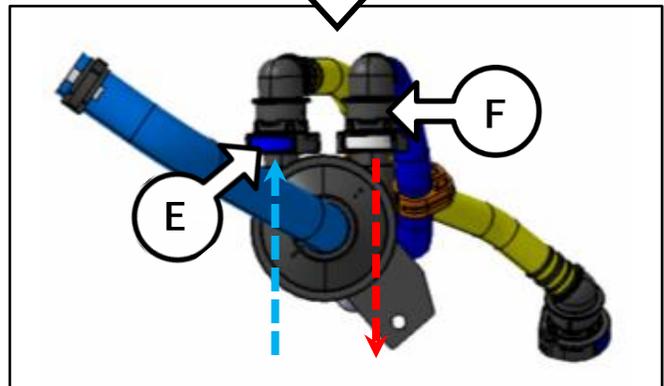
PHEV ONLY: The air separator (H) may be removed for more access.



15. Connect the Inlet and Outlet hoses from the flushing machine to the detached circulation hoses (E and F) shown.

16. Turn the 'Air' and 'Pump' toggle switches on the flushing machine to the 'ON' position to begin flushing.

17. Allow machine to run for five (5) minutes.



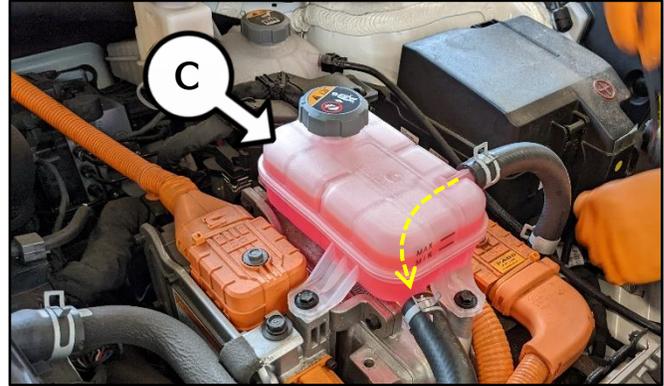
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18. Reattach the coolant reservoir (C) Inlet and Outlet hoses in the reverse order of removal and fill the coolant reservoir (C) on the vehicle with the applicable 'new' coolant/antifreeze for the vehicle.

- HEV with Pink (LLC10) Coolant
- PHEV with Blue (BSC-2) Coolant

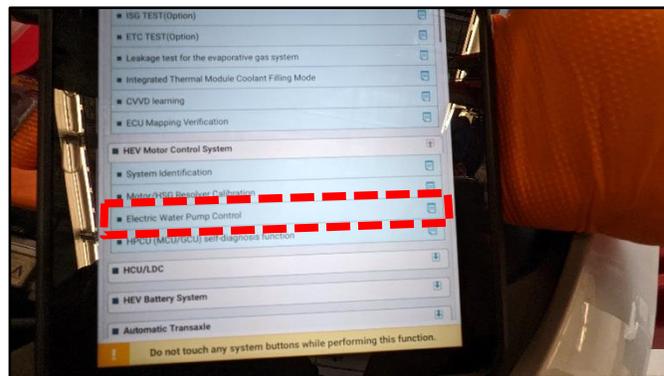
Note: 'New' coolant should never be added into the SST reservoir tank.



(HEV model shown above for reference purpose only)

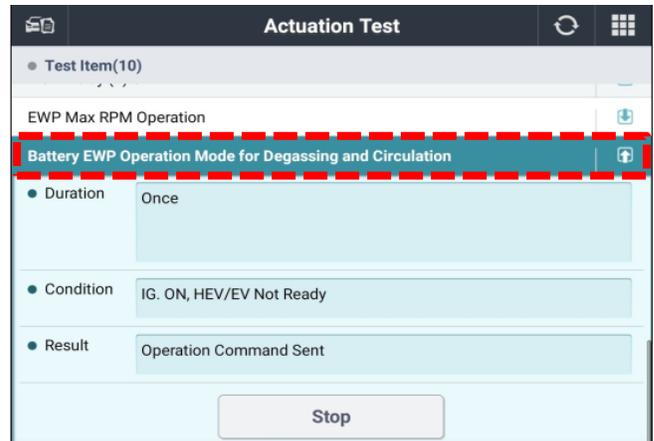
19. **HEV & PHEV:** Perform air bleeding using KDS by running the HEV Motor Control System > Electric Water Pump Control.

Note: Continue filling the coolant reservoir on the vehicle with the applicable new coolant/antifreeze as needed to complete the air bleeding process.



PHEV: Under Battery Management System using KDS, perform Battery EWP Operation Mode for Degassing and Circulation (Actuation Test).

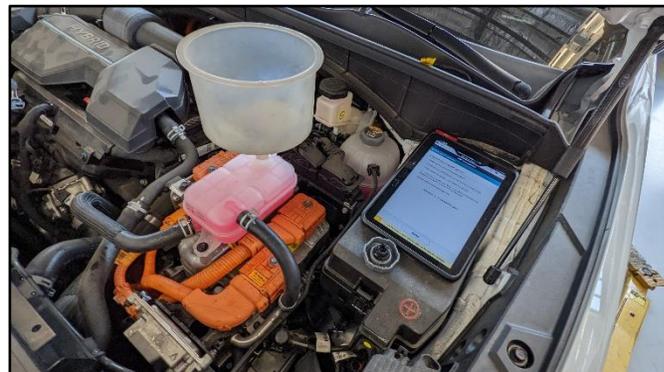
Note: Continue filling the coolant reservoir on the vehicle with the applicable new coolant/antifreeze as needed to complete the air bleeding process. The 'Battery EWP Operation Mode' will keep running until you manually select 'Stop'.



20. Install the coolant reservoir cap and secure tight.

21. Confirm normal vehicle operation.

Refer to TSB [SST080](#) 'Coolant Flushing Machine Guide' for cleaning instructions after use.



(HEV model shown above for reference purpose only)

HEV: *Continued on next page...*



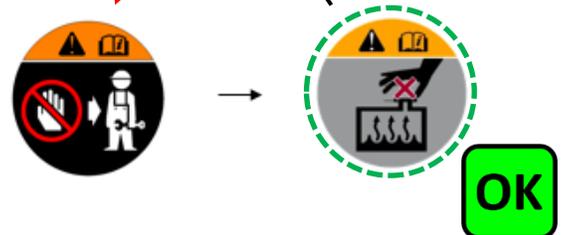
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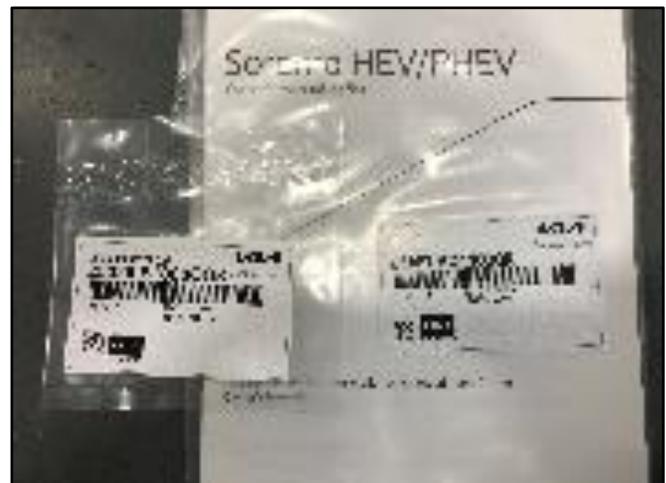
- 22. **HEV ONLY:**
Replace the coolant reservoir cap (NG) with the new label (OK).

WARNING

Use extreme caution when removing old label as sharp blades can cause serious injury.



- 23. Insert Leaflet in the Owner's Manual in the glovebox.



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AFFECTED VEHICLE RANGE:

Model	Production Date Range
Sorento HEV (MQ4 HEV)	September 2, 2020 through September 29, 2021
Sorento PHEV (MQ4 PHEV)	June 29, 2021 through October 1, 2021

REQUIRED TOOL:

Tool Name	Part Number	Figure	Comments
Coolant/Antifreeze Flushing Equipment Set	KQ253 CV158QQK		For service/parts contact: Snap-On Business Solutions (888) 542-1011

REQUIRED PART:

Part Name	Part Number	Figure	Comment	Qty.
Label and Leaflet Kit	25328 MQ4NOQQK		As kit (One of each)	1
Coolant/Antifreeze (MQ4 HEV) Pink	UM022 CH271		100% Concentration Coolant: diluted water 6:4 Coolant injection: 1.9ℓ	1 (1 Gal.)
Coolant/Antifreeze (MQ4 PHEV) Blue	UM022 CH270		60% Concentration No need to dilute water Coolant injection: 7.9ℓ	2 (1 Gal.)

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
MQ4 HEV	V	254RO CH000	0	(SA515) Coolant Flushing/Replacement + Cap & Leaflet Label Application	230020R3	0.7 M/H	25328 MQ4NOQQK	1
MQ4 PHEV				(SA515) Coolant Flushing/Replacement	230020R4		UM022 CH271	

Note: Manually enter sublet code 'X2' for reimbursement of one roundtrip rideshare expense or up to three (3) days of rental expense, with supporting documentation.

NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference **SA515** when accessing the WebDCS system.